What I Claim Is:

1. A method of cutting quartz plate where angles of said cuts are determined according to the following formula:

$$T_f = 3.9 + 6.5\cos^2\theta + \tfrac{1}{2}\left[\frac{c_{66}T_{c_{66}}\sin^2\theta + c_{44}T_{c_{44}}\cos^2\theta + T_{c_{14}}c_{14}\sin 2\theta}{c_{66}\sin^2\theta + c_{44}\cos^2\theta + c_{14}\sin 2\theta}\right] + \left[a'\cdot\left(\sin(\omega\cdot\theta + \phi') + \sin(\omega\cdot\theta + \phi')^2\right)\right] + \delta$$

where

T_f = frequency temperature coefficient,

θ = angle of rotation from the Z axis,

c_{xx} = is the value of stiffness. The subscripts denote the stiffness of a given rhombohedral axis,

ω = the angular velocity of the wave traversing the crystal face,

a' = the amplitude of the wave traversing the crystal face,

ϕ' = the phase delay imposed on the wave traversing the crystal face due to resistance by its surroundings, and

δ = offset value between the idealized wave and the wave with a damping function.

2. A method of cutting a quartz plate where angles of said cutting are determined according to the following equation:

$$T_f = 3.9 + 6.5\cos^2\theta + \tfrac{1}{2}\left[\frac{c_{66}T_{c_{66}}\sin^2\theta + c_{44}T_{c_{44}}\cos^2\theta + T_{c_{14}}c_{14}\sin 2\theta}{c_{66}\sin^2\theta + c_{44}\cos^2\theta + c_{14}\sin 2\theta}\right] + \left[a'\cdot\left(\sin(\omega\cdot\theta + \phi') + \sin(\omega\cdot\theta + \phi')^2\right)\right] + \delta$$

where

T_f = frequency temperature coefficient,

θ = angle of rotation from the Z axis,

c_{xx} = is the value of stiffness. The subscripts denote the stiffness of a given rhombohedral axis,

ω = the angular velocity of the wave traversing the crystal face,

a' = the amplitude of the wave traversing the crystal face,

ϕ' = the phase delay imposed on the wave traversing the crystal face due to resistance by its surroundings, and

δ = offset value between the idealized wave and the wave with a damping function,

further comprising the steps of:

a) constructing a curve describing frequency deviation of said quartz plates as a function of temperature using said equation; and

b) determining from said curve those angles of cut that result in zero frequency deviation as a function of temperature having a low total frequency deviation as a function of temperature.

3. The method of cutting a quartz plate wherein angles of said cutting are determined as recited in Claim 2, further comprising the additional step of locating said angles of cut on those parts of the curve having the lowest relative slope in order to improve typical manufacturing yields.

4. The method of cutting a quartz plate wherein angles of said cutting are determined as recited in Claim 2, further comprising the additional step of choosing the thickness of the quartz plate in accordance with the desired frequency.

5. The method of cutting a quartz plate where angles of said cutting are determined as recited in Claim 2, wherein said angles of cut having zero second order frequency deviation as a function of temperature are determined by the additional steps comprising:

a) calculating a function that describes the second derivative of said curve ,

b) constructing the curve that represents said function,

c) determining from said curve those angles of cut that result in a second derivative zero frequency deviation as a function of temperature.

6. A method of cutting a quartz plate that produces a desired frequency shift over a given temperature change consisting of the following steps:

a) determining how much deviation is required to cancel out the effects of other electronic components present,

b) calculating values of the first, second, and third order frequency shifts that produce said desired frequency shift with temperature change according to the following:

$$T_f = 3.9 + 6.5\cos^2\theta + \tfrac{1}{2}\left[\frac{c_{66}T_{c_{66}}\sin^2\theta + c_{44}T_{c_{44}}\cos^2\theta + T_{c_{14}}c_{14}\sin 2\theta}{c_{66}\sin^2\theta + c_{44}\cos^2\theta + c_{14}\sin 2\theta}\right] +$$
$$\left[a'\cdot\left(\sin(\omega\cdot\theta + \phi') + \sin(\omega\cdot\theta + \phi')^2\right)\right] + \delta$$

where

T_f = frequency temperature coefficient,

θ = angle of rotation from the Z axis,

c_{xx} = is the value of stiffness. The subscripts denote the stiffness of a given rhombohedral axis,

ω = the angular velocity of the wave traversing the crystal face,

a' = the amplitude of the wave traversing the crystal face,

ϕ' = the phase delay imposed on the wave traversing the crystal face due to resistance by its surroundings, and

δ = offset value between the idealized wave and the wave with a damping function.

c) choosing quartz plate thickness giving a desired frequency; and,

d) modifying the angle of cut and/or plate dimensions and /or electrode shape or size to reduce activity dips produced by inter-modal interference effects, whereby known frequency shifts produced by other electronic components are cancelled.

7. A method of manufacturing a piezoelectric quartz plate having a coefficient of temperature defined by an angle of cut that is determined by:

$$T_f = 3.9 + 6.5\cos^2\theta + \tfrac{1}{2}\left[\frac{c_{66}T_{c_{66}}\sin^2\theta + c_{44}T_{c_{44}}\cos^2\theta + T_{c_{14}}c_{14}\sin 2\theta}{c_{66}\sin^2\theta + c_{44}\cos^2\theta + c_{14}\sin 2\theta}\right] + \left[a'\cdot\left(\sin(\omega\cdot\theta + \phi') + \sin(\omega\cdot\theta + \phi')^2\right)\right] + \delta$$

where

T_f = frequency temperature coefficient,

θ = angle of rotation from the Z axis,

c_{xx} = is the value of stiffness. The subscripts denote the stiffness of a given rhombohedral axis,

ω = the angular velocity of the wave traversing the crystal face,

a' = the amplitude of the wave traversing the crystal face,

ϕ' = the phase delay imposed on the wave traversing the crystal face due to resistance by its surroundings, and

δ = offset value between the idealized wave and the wave with a damping function.

8. The method of manufacturing a piezoelectric quartz as recited in Claim 7 further comprising the additional step of making an in-plane omega rotation further defining said angle of cut whereby unwanted vibrational modes are eliminated from said coefficient of temperature.